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EXAMINER
CURS, NATHAN M

ART UNIT	PAPER NUMBER
2613	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/743,213	MISHRA ET AL.
	Examiner	Art Unit
	Nathan Curs	2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _22 December 2003_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under _Ex parte Quayle_, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-29_ is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1,2,10,12-20, 25 and 26_ is/are rejected.

7)☒ Claim(s) _3-9,11,21-24 and 27-29_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _22 December 2003_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _12/03_.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1.   The information disclosure statement filed 22 December 2003 fails to comply with the

provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because citations 1-3 and 5 have no date.

The information referred to in these citations has not been considered as to the merits.

Applicant is advised that the date of any re-submission of any item of information contained in

this information disclosure statement or the submission of any missing element(s) will be the

date of submission for purposes of determining compliance with the requirements based on the

time of filing the statement, including all certification requirements for statements under 37 CFR

1.97(e). See MPEP § 609.05(a).

Claim Objections

2.   Claims 1, 11, 12, 17, 22, 25 and 27-29 are objected to because of the following

informalities:

Claim 1 in line 3 recites "appending slice headers to each of the plurality of data slices".

It appears the applicant intended to claim "appending a slice header to each of the plurality of

data slices", as opposed to the present claiming of multiple slice headers per data slice.

In claim 11 line 3, the acronym "OBS" should be defined for clarity.

Claim 12 in line 6 recites "the fixed length optical cells"; "the" should be deleted for

proper antecedence language.

In claim 17, lines 1-2, "data slice" should be "data slices" for consistent antecedence

language. In lines 3-5, "the fixed length optical cells to be transmitted on a first carrier

wavelength" and "the fixed length optical cells to be transmitted on a second carrier wavelength"

should respectively be "a first subset of the fixed length optical cells to be transmitted on a first carrier wavelength" and "a second subset of the fixed length optical cells to be transmitted on a second carrier wavelength", or similar, for consistent antecedence language.

In claim 22 in line 1, "the scheduler is further to schedule" is improper grammar. Also, claim 22 recites scheduling "the data slices" into multiple optical bursts. However, claim 22 ultimately depends from claim 19, where "the data slices" are schedule into one optical burst. Since "the data slices" cannot simultaneously be in a single burst and multiple bursts, claim 22 should be modified to use language such as "additional data slices" and "additional optical bursts".

In claim 25, line 10, "the fixed length optical cells to be transmitted" should be "the optical bursts to be transmitted" for consistent antecedence language since the fixed length optical cells are already within the optical bursts. Also, in line 12, "a egress node" should be "an egress node" for proper grammar.

In claim 27 line 1, "the scheduler is further to schedule" is improper grammar. In line 4, "transmitted to be transmitted" is improper grammar.

In claim 28 lines 1-2, "the header pre-append block is further to generate" is improper grammar.

In claim 29 line 1, "the egress node is further to reassemble" is improper grammar.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4.   Claims 1, 12-18, 20, 25 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 in lines 4-5 recites "scheduling the plurality of data slices... during fixed time slots defined on a per carrier wavelength basis". It's not clear if the "per carrier wavelength basis" limitation is definitely establishing multiple wavelengths or WDM transmission in the network.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps correspond to steps 335, 340 and 345 in applicant's fig. 3. Claim 1 simply recites appending slice headers to data slices and then scheduling these data slices onto the network during fixed time slots. However, fig. 3 shows that after slice headers are appended to the data slices, further scheduling the slices into optical burst cells of one or more bursts, then appending burst headers, and then transmitting the optical bursts onto the network during fixed time slots, is required to get the data slices onto the network.

Claim 12 and depending claims 13-18, are rejected under 35 U.S.C. 112, second paragraph for the following reasons: Claim 12 in lines 1-2, claim 14 in lines 1-2, and claim 16 in lines 1-2, each recite providing instructions that "if executed" will cause a machine to perform operations. It's not clear here if the instructions will be executed, since their non-execution is within the scope of "if executed". Further, it's not clear if the applicant is claiming the medium or the operations that are performed "if" the instructions are executed.

Claim 12 is also rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps correspond to steps 340 and 345 in applicant's fig. 3. Claim 12

recites appending slice headers to data slices and then scheduling these data slices onto the

network within optical bursts. However, fig. 3 shows that after slice headers are appended to

the data slices, further scheduling the slices into optical burst *cells* of one or more bursts, then

appending burst headers, and then transmitting the optical bursts onto the network during fixed

time slots, is required to get the data slices onto the network.

Claim 20 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being

incomplete for omitting essential elements, such omission amounting to a gap between the

elements. See MPEP § 2172.01. The claims each recite a signaling protocol used to establish

path(s) across the network/plurality of nodes. However, a protocol in and of itself is simply an

abstract set of transmission rules, it can't be "used" unless it is carried out by an actual device in

or connected to the node and/or network/system. Such a necessary device is missing from the

claims.

Claim 25 in line 10 recites "regular" time slots. It's not clear what specifically qualifies a

time slot as "regular".

Claim Rejections - 35 USC § 101

5.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

6.   Claim 12-18 are rejected under 35 U.S.C. 101 because the claimed invention is directed

to non-statutory subject matter. The claims are directed to instructions for a machine.

Instructions for a machine, in and of themselves, are simply data structures, and data structures

not claimed as embodied in computer-readable media are descriptive material per se and are

not statutory because they are not capable of causing functional change in the computer (see

MPEP § 2106.01). The language "a machine-accessible medium that provides instructions"

only vaguely associates the instructions with the medium, and the medium itself as "machine-

accessible" only vaguely resembles "computer-readable" medium. The claim language does

not establish that the instructions are actually embodied in computer-readable media.

Claim Rejections - 35 USC § 102

7.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8.   Claims 1, 2, 10 and 12-14 are rejected under 35 U.S.C. 102(e) as being anticipated by

anticipated by Ovadia (US Patent No. 7277634).

The applied reference has a common assignee with the instant application. Based upon

the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C.

102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37

CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the

inventor of this application and is thus not the invention "by another," or by an appropriate

showing under 37 CFR 1.131.

Regarding claim 1, Ovadia discloses a method (fig. 2 and col. 4, line 37 to col. 5, line

49), comprising: slicing a block of data into a plurality of data slices (fig. 2 and col. 4, lines 53-

62, where assembling stored data packets into different IP payloads reads on slicing a block of

data into a plurality of data slices); appending slice headers to each of the plurality of data slices

(fig. 4A and col. 7, lines 26-42, where the IP header is for the IP payload); and scheduling the

plurality of data slices for transmission onto an optical switching network during fixed time slots

(col. 4, line 63 to col. 5, line 11, where a reserved time slot is a "fixed" time slot) defined on a per

carrier wavelength basis (col. 3, lines 47-56 and col. 4, lines 25-36).

Regarding claim 2, Ovadia discloses the method of claim 1 wherein the block of data

comprises a data stream received from another network and which is buffered at an edge node

of the optical switching network (fig. 2 and col. 4, lines 37-62 where the LAN is another network,

and where the stored packets in the ingress (edge) node are buffered packets).

Regarding claim 10, Ovadia discloses the method of claim 1, further comprising:

establishing optical paths through the optical network prior to scheduling the plurality of data

slices for transmission, wherein establishing the optical paths and scheduling the plurality of

data slices are independent of each other (col. 5, lines 29-49, where the constraint-based

routing protocol establishes an optical path through the network from ingress to egress, before

the ingress node starts transmitting burst labels or burst payloads).

Regarding claim 12, Ovadia discloses a machine-accessible medium that provides

instructions that, if executed by a machine, will cause the machine to perform operations (fig. 2

and col. 4, line 37 to col. 5, line 49, where the ingress switching node is a machine and where

the node, being a data processing node, inherently has some sort of stored software or firmware

instructions that define the data processing functionality of the node) comprising: slicing data

blocks into data slices (fig. 2 and col. 4, lines 53-62, where assembling stored data packets into

different IP payloads reads on slicing blocks of data into data slices); generating slice headers

to append to each of the data slices (fig. 4A and col. 7, lines 26-42, where the IP header is for

the IP payload); and scheduling the data slices for transmission onto an optical switching

network within optical bursts (col. 4, line 63 to col. 5, line 11, where each IP payload is within an optical burst payload), the optical bursts formed of fixed length optical cells (fig. 4A and col. 7 lines 26-42, where the predefined sections of the optical burst payload – elements 40-44 – read on fixed length cells that make up the burst payload).

Regarding claim 13, Ovadia discloses the machine-accessible medium of claim 12 wherein scheduling the data slices is independent of establishing a path across the optical switching network (col. 5, lines 29-49, where the constraint-based routing protocol establishes an optical path through the network from ingress to egress, before the ingress node starts transmitting burst labels or burst payloads).

Regarding claim 14, Ovadia discloses the machine-accessible medium of claim 13, further providing instructions that, if executed by the machine, will cause the machine to perform further operations, comprising buffering data streams received from another network to generate the data blocks (fig. 2 and col. 4, lines 37-62, where the LAN is another network, stored packets are buffered packets, and where the plurality of received data packets read on a plurality of data streams).

9.   Claims 1, 12, 18 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Pearson (US Patent No. 5477364).

Regarding claim 1, Pearson discloses a method, comprising: slicing a block of data into a plurality of data slices (fig. 2 and col. 2, line 63 to col. 3, line 16, where filling time slices with portions of the data reads on slicing a block of data into a plurality of data slices); appending slice headers to each of the plurality of data slices (fig. 2, element 6 and col. 2, lines 63 to col. 3, line 16); and scheduling the plurality of data slices for transmission onto an optical switching network during fixed time slots (col. 1, lines 31-35 and fig. 3 and col. 3, lines 28-34, where the

high level cell filled with adjacent lower level cells reads on scheduling the lower level cells into

fixed time slots) defined on a per carrier wavelength basis (col. 2, lines 19-23).

Regarding claim 12, Pearson discloses a machine-accessible medium that provides

instructions that, if executed by a machine, will cause the machine to perform operations (fig. 1A

and col. 2, line 63 to col. 3, line 23, where the transmit node is a machine and where the node,

being a data processing node, inherently has some sort of stored software or firmware

instructions that define the data processing functionality of the node) comprising: slicing data

blocks into data slices (fig. 2 and col. 2, line 63 to col. 3, line 16, where filling time slices with

portions of the data reads on slicing a block of data into a plurality of data slices); generating

slice headers to append to each of the data slices (fig. 2, element 6 and col. 2, lines 63 to col. 3,

line 16); and scheduling the data slices for transmission onto an optical switching network within

optical bursts, the optical bursts formed of the fixed length optical cells (col. 1, lines 31-35 and

fig. 3 and col. 3, lines 28-34, where the high level cell filled with lower level cells reads on an

optical burst and where the lower level cells – each slice plus slice header – read on fixed length

optical cells).

Regarding claim 18, Pearson discloses the machine-accessible medium of claim 12,

further providing instructions that, if executed by the machine, will cause the machine to perform

further operations, comprising: generating burst headers for each of the optical bursts (fig. 3,

element 30 and col. 3, lines 28-34); and appending one of the burst headers to a first one of the

data slices in each of the optical bursts (fig. 30, element 30 adjacent to element 31).

Regarding claim 19, Pearson discloses an edge node of an optical switching network

(fig. 1A and col. 2, line 63 to col. 3, line 23, where the transmitter node reads on an edge node),

comprising: a stream slicer to slice a data block into data slices (fig. 2 and col. 2, line 63 to col.

3, line 16, the means for filling time slices with portions of the data); a header pre-append block

communicatively coupled to receive the data slices from the stream slicer and to append a slice

header to each of the data slices (fig. 2, the means for appending element 6 to element 7 and

col. 2, lines 63 to col. 3, line 16); a scheduler coupled to schedule the data slices into fixed

length time slots (col. 1, lines 31-35 and fig. 3 and col. 3, lines 28-34, the means for assembling

the high level cell filled with lower level cells, where filling the high level cell with a string of lower

level cells reads on scheduling the lower level cells into fixed time slots); and a burst transmit

block coupled to generate on optical burst for transmission onto the optical switching network,

the optical burst to include the data slices with the appended slice headers (fig. 3 and col. 3,

lines 28-34, the means for transmitting the optical bursts onto the network).

Claim Rejections - 35 USC § 103

10.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11.   Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pearson (US

Patent No. 5477364) in view of Xu et al. (US Patent Application Publication No. 2002/0071149).

        Regarding claim 25, Pearson discloses a system, comprising: an edge node comprising:

a stream slicer to slice data streams into data slices; a header pre-append block to append a

slice header to each of the data slices; a scheduler to schedule the data slices for transmission

within fixed length optical cells; and a burst transmit block to generate optical bursts containing

the fixed length optical cells, the fixed length optical cells to be transmitted during regular time

slots; and a egress node optically coupled to receive the optical bursts; and a plurality of

switching nodes optically coupled between the edge node and the egress node to route the data

streams from the edge node to the egress node (fig. 1A, element 5 and). Pearson discloses

one switching node between transmitter and the receivers as an example, and does not

explicitly disclose multiple switching nodes in the drawings, but discloses that more complex

networks with a wide range of topologies are possible in addition to topology of fig. 1A (col. 2,

lines 54-62). One of ordinary skill in the art at the time of the invention could have used a

greater number of switches and receivers than that shown in Pearson fig. 1A, and the results

would have been predictable; namely, the more complex optical network topology would provide

communication to a greater number of receivers in various physical locations with respect to the

transmitter node. Pearson also does not explicitly show the transmitter acquiring data streams

from another network or the receiver providing the data streams to another network, however

Pearson does disclose the optical network as a point to multi-point WDM network (col. 2, lines

19-23 and fig. 1A) and discloses support for transmitting signals of any format and information

rate across the network (col. 1, lines 48-58). Xu shows a point to multi-point WDM network,

used for transmitting signals between external networks connected to opposite ends of the

WDM network (fig. 1 and paragraphs 0004-0006). One of ordinary skill in the art at the time of

the invention could have added external networks to opposite ends of the Pearson optical

system, and the results would have been predictable; namely, the Pearson optical network

would communicate external network traffic between external networks, increasing overall

bandwidth by using WDM to carry multiple data streams in parallel.

Allowable Subject Matter

12.   Claims 3-9, 11 and 21-24 are objected to as depending from a rejected base claim, but

would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd

paragraph, and the applicable claim objections, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
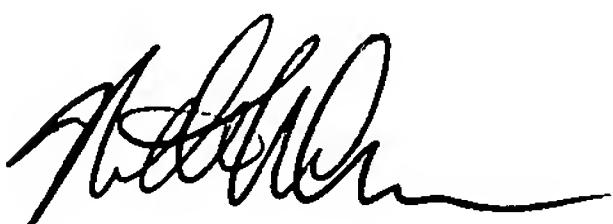
Conclusion

13.   Any inquiry concerning this communication from the examiner should be directed to N. Curs whose telephone number is (571) 272-3028. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached at (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (800) 786-9199.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pairdirect.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NMC

11/12/2007

Nathan M. Curs